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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/193,928	11/17/1998	TETSUYA ATSUMI	M2009-9	2606

7590 06/05/2002

MORRISON LAW FIRM
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EXAMINER

BLAU, STEPHEN LUTHER

ART UNIT	PAPER NUMBER
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3711

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/193,928

Applicant(s)

ATSUMI ET AL.

Examiner

Stephen L. Blau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 21 is/are pending in the application.
- 4a) Of the above claim(s), _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on 14 March 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/193,928 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC ' 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng in view of Kobayashi (4,682,504), JP 6-114131, and JP 9-140840.

Cheng discloses an inner layer being a first angled layer in form of bonding a first layer (Ref. No. 22b) and a second layer (Ref. No. 22c), a first angled layer being concentric with a longitudinal axis of a shaft and circular in cross section in the form of the body having successive layers placed around a mandrel (Col. 3, Lns. 1-12) and the shape formed having a diameter (Col. 2, Lns. 41-59), a first straight layer formed on a

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first angled layer (Fig. 2, Ref. No. 22a), a first straight layer being concentric with a longitudinal axis of a shaft and circular in cross section in the form of the body having successive layers placed around a mandrel (Col. 3, Lns. 1-12) and the shape formed having a diameter (Col. 2, Lns. 41-59), a second angled layer formed on a first straight layer, a second straight layer formed on a second angled in the form of there being 10-20 layers and fibers of each successive layer are 22a, 22b and 22c and as such there will be at least three sequences of the order of 22a, 22b and 22c and a second angled layer will be formed by bonding a first layer (Ref. No. 22b) and a second layer (Ref. No. 22c) (Col. 2, Lns. 64 through Col. 3, Lns. 12), a second angled layer and a second straight layer being concentric with a longitudinal axis of a shaft and circular in cross section in the form of the body having successive layers placed around a mandrel (Col. 3, Lns. 1-12) and the shape formed having a diameter (Col. 2, Lns. 41-59).

Cheng lacks each layer extending over a length of a shaft, a second angled layer having an angle orientation and thickness effective to provide a shaft with a torsional strength of at least 120 kgf x m x degrees, and a weight of from 30-40 grams.

Kobayashi discloses a strong golfer needing a shaft with high stiffness for longitudinal bending and torsional bending (Col. 1, Lns. 13-25). JP 6-114131 discloses each layer extends over a length of a shaft (Fig. 2, Translator), and a shaft having a twisting strength of 230 kgf cm (Table of page 4). As shown in JP 6-114131, an artisan skilled in the art of manufacturing a torsional resistant and strong shaft would have selected a suitable torsional strength for a shaft in which a torsional strength of at least 120 kgf x m x degrees is included. In view of the patents of Kobayashi and JP 6-

114131 it would have been obvious to modify the shaft of Cheng to have a shaft with sufficient layers of fibers oriented at an angle with respect to longitudinal axis of a shaft and thicknesses of layers such that there would be a torsional strength of at least 120 kgf x m x degrees in order to minimize errors when swinging a shaft due to the shaft having excessive twisting during the swing of a strong player causing errors at impact. In view of the patent of JP 6-114131 it would have been obvious modify the shaft of Cheng to have each layer extending over the length of a shaft in order to provide strength and stiffness along the entire length of a shaft.

JP 9-140840 discloses layers being arranged substantially concentrically about a central portion of a golf club shaft (Figs. 1 and 4-6), and a shaft weight of 10-50 grams (Derwent abstract) in order to have a shaft with good bending strength and twisting strength which is light weight (Derwent advantage). In view of the patent of JP 9-140840 it would have been obvious to modify the shaft of Cheng to have a shaft with a weight of 30-40 grams in order to have a light weight shaft which minimizes fatigue felt by a player while playing a round of golf. In addition, it would have been obvious to modify the shaft of Cheng to have the layers arranged substantially concentrically about a central portion of a shaft in order to have more consistent performance about the circumference of a shaft.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (3,646,610) in view of JP 6-114131, Kusumoto, JP 9-140840, Preece and Cecka.

Jackson discloses a first angled layer (43'), a first straight layer (47') formed on a first angled layer, a second angled layer (50') formed on a first straight layer, a second straight layer (54') formed on second angled layer (Fig. 15), each layer extending over the length of the shaft (Fig. 15), fibers (Col. 2, Lns. 46-56), angled layers having fibers in opposite directions (Fig. 15), fibers of a second angled layer oriented at an angle in a range from 35-75 degrees (Fig. 15), and another embodiment of a tapered shaft having a location near a tip end having a wall thickness substantially twice the thickness of a location near a butt end (Figs. 4-5).

Jackson lacks a first angled layer and a second angled layer each being formed by bonding a first layer and a second layer, a first layer having fibers oriented at a first angle and a second layer having fibers oriented at a second opposite angle, layers effective to provide a shaft with a torsional strength of at least 120 kgf x m x degrees, a weight of from 30-40 grams, a second angled layer having a thickness in a range of from .04 to .1mm, and a first angled layer having a thickness near the small diameter end of a shaft twice that of the thickness of the layer near the large diameter end of a shaft.

JP 6-114131 discloses each layer extends over a length of a shaft (Fig. 2, Translator), and a shaft having a twisting strength of 230 kgf cm. As shown in JP 6-114131, an artisan skilled in the art of manufacturing a torsional resistant and strong shaft would have selected a suitable torsional strength in which a torsional strength of at least 120 kgf x m x degrees is included. In view of the patent of JP 6-114131 it would have been obvious to modify the shaft of Jackson to have a shaft with sufficient layers

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of fibers oriented at an angle with respect to longitudinal axis of a shaft and thicknesses such that there would be a torsional strength of at least 120 kgf x m x degrees in order to minimize errors when swinging a shaft due to the shaft having excessive twisting during the swing of a strong player causing errors at impact. In view of the patent of JP 6-114131 it would have been obvious modify the shaft of Jackson to have each layer extending over the entire length of a shaft in order to provide strength and stiffness along the entire length of a shaft.

Kusumoto discloses a shaft made with fibers in the form of prepreg sheets (abstract) having a thickness not larger than .06 mm (Col. 12 Lns. 12-27). In view of the patent of Kusumoto it would have been obvious to modify the shaft of Jackson to be made of fibers in prepreg sheets in order to simplify the manufacturing process by not have to have a winding machine wrapping fibers around a mandrel. In view of the patent of Kusumoto it would have been obvious to modify the shaft of Jackson to have a shaft formed of to have a second angled layer having a thickness in a range of from .04 to .1 mm in order to provide a shaft with a sufficient amount of stiffness in the longitudinal and torsional directions.

JP 9-140840 discloses a shaft weight of 10-50 grams (Derwent abstract) in order to have a shaft with good bending strength and twisting strength which is light weight (Derwent advantage). In view of the patent of JP 9-140840 it would have been obvious to modify the shaft of Jackson to have a shaft with a weight of 30-40 grams in order to have a light weight shaft which minimizes fatigue felt by a player while playing a round of golf.

Preece discloses an angled layer formed by bonding a first angled layer with second angled layer (Fig. 1B). In view of the patent of Preece it would have been obvious to modify the shaft of Jackson to have an angled layer formed by bonding a first angled layer with second angled layer in order to simplify the manufacturing process of producing angled layers with opposite angle orientations.

Cecka discloses a tapered shaft having a tip end wall thickness substantially twice the thickness of a butt end wall thickness (Figs. 8-9). In view of the patent of Cecka it would have been obvious to modify the shaft of Jackson to have each layer twice the thickness at the tip end compared to the butt end in order to have a strong tip end to prevent the tip end from fracturing.

Response to Arguments

5. The argument that it is improper to use the reference of Cheng since Cheng does not teach the reinforcing with a layered structure elsewhere other than near the hosel is disagreed with. The examiner was not using the layered structures at the reinforcement of the tip end of the shaft to show the claimed layers. The layers used to form the base rod (12) were used to show the claimed layer pattern. With the teaching of JP 6-114131 it would have been obvious to have these layers the length of the entire shaft as claimed. The argument that Cheng is innocent of the layered structure since it discloses angled, angled and straight is disagreed with. Applicants angled layer is formed by bonding two opposing angled layers together. Clearly the layers of reference

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number 22c and 22b are bonded together due to be next to each other and can represent the angled layer just like figures 4c and 4e. The argument that it is improper to use the reference of Kusumoto since Kusumoto does not have a pattern as claimed is disagreed with. Kusumoto was not used to show a pattern of layers but the teaching of a thickness for a layer as defined in the claims. Clearly the thickness of a layer as defined by Kusumoto is a suitable selection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (703) 308-2712. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Paul Sewell whose telephone number is (703) 308-2126. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858.

Slb 30 May 2002


STEPHEN BLAU
PRIMARY EXAMINER